

**What Is Claimed Is:**

1           1.    A method of forming a transflective liquid crystal  
2 display device with a wide-viewing angle, comprising the steps  
3 of:

4           providing a first substrate and a second substrate opposite  
5           the first substrate;

6           forming an insulating layer having an uneven surface on the  
7           first substrate;

8           forming at least one opening in the insulating layer;

9           forming a conformal reflective electrode on a sidewall and  
10           a bottom of the opening and part of the insulating  
11           layer, wherein the reflective electrode has at least  
12           one opaque portion and at least one transparent  
13           portion, and the transparent portion of the  
14           reflective electrode is located in the opening;

15          forming a conformal first alignment film on the reflective  
16          electrode;

17          forming a common electrode on an inner surface of the second  
18          substrate;

19          forming a second alignment film on the common electrode;  
20          and

21          filling a space between the first substrate and the second  
22          substrate with negative type liquid crystal  
23          molecules added with a chiral agent to form a liquid  
24          crystal layer.

1           2.    The method according to claim 1, further comprising  
2 the step of:

3           forming at least one symmetric protruding element on the  
4           insulating layer located around the reflective  
5           electrode.

1           3.    The method according to claim 2, wherein the symmetric  
2 protruding element has a triangular cross-section.

1           4.    The method according to claim 1, wherein, when a  
2 voltage is applied between the reflective electrode and the  
3 common electrode, an asymmetric electric field occurs at a  
4 fringe portion of the reflective electrode.

1           5.    The method according to claim 1, wherein the opaque  
2 portion of the reflective electrode is an aluminum layer.

1           6.    The method according to claim 1, wherein the  
2 transparent portion of the reflective electrode is an ITO  
3 (indium tin oxide) layer.

1           7.    The method according to claim 1, wherein a rubbing  
2 treatment is not performed on the first alignment film.

1           8.    The method according to claim 1, wherein a rubbing  
2 treatment is not performed on the second alignment film.

1           9.    A method of widening a viewing angle of a  
2 transfective liquid crystal display device, comprising the  
3 steps of:

4           providing a first substrate and a second substrate opposite  
5           the first substrate;

6           forming a transparent insulating layer having an uneven  
7           surface on the first substrate;

8           forming at least one opening in the insulating layer;

9       forming a conformal reflective electrode on a sidewall and  
10       a bottom of the opening and part of the insulating  
11       layer, wherein the reflective electrode has at least  
12       one opaque portion and at least one transparent  
13       portion, and the transparent portion of the  
14       reflective electrode is located in the opening;  
15       forming at least one symmetric protruding element on the  
16       insulating layer located around the reflective  
17       electrode;  
18       forming a conformal first alignment film on the reflective  
19       electrode and the symmetric protruding element;  
20       forming a common electrode on an inner surface of the second  
21       substrate;  
22       forming a second alignment film on the common electrode;  
23       and  
24       filling a space between the first substrate and the second  
25       substrate with negative type liquid crystal  
26       molecules added with a chiral agent to form a liquid  
27       crystal layer.

1       10. The method according to claim 9, wherein the symmetric  
2       protruding element has a triangular cross-section.

1       11. The method according to claim 9, wherein, when a  
2       voltage is applied between the reflective electrode and the  
3       common electrode, an asymmetric electric field occurs at a  
4       fringe portion of the reflective electrode.

1       12. The method according to claim 9, wherein the opaque  
2       portion of the reflective electrode is an aluminum layer.

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1           13. The method according to claim 9, wherein the  
2 transparent portion of the reflective electrode is an ITO  
3 (indium tin oxide) layer.

1           14. The method according to claim 9, wherein a rubbing  
2 treatment is not performed on the first alignment film.

1           15. The method according to claim 9, wherein a rubbing  
2 treatment is not performed on the second alignment film.